The VacScene

Public Health – Seattle & King County **Immunization Newsletter** Volume 11, Number 2 **March/April 2005**

What's Inside?

The VacScene

Public Health - Seattle & King County
Communicable Disease, Epidemiology and Immunization Section
Jeffrey S. Duchin, M.D.
Chief, Communicable Disease Control, Epidemiology & Immunization Section
David Bibus, Health Services Administrator
999 Third Avenue, Suite 500
Seattle, WA 98104
Phone: 206-296-4774 Fax: 206-296-4803
Email: Julie.Nugent-Carney@metrokc.gov
Website: www.metrokc.gov/health

The VacScene is a publication of Public Health – Seattle & King County written for health professionals. Content is consistent with the most current recommendations from the Centers for Disease Control and Prevention (CDC) and the Advisory Committee on Immunization Practices (ACIP).

Publication Staff
Editor: Julie Nugent-Carney
Contributors: Chas Debolt, Betsy Hubbard, Marcus Grandjean, Lauren Greenfield, Chris Skilton, Krista Rietberg, Darren Robertson, Linda Vrtis

Improved Child Immunization Rates

Midyear results from the National Immunization Survey (NIS) indicate that immunization rates for children in King County are continuing to rise. The NIS provides estimates of vaccination coverage among children aged 19-35 months for each of the 50 states and 28 selected urban areas. This report contains data from the last two quarters of 2003 and the first two quarters of 2004 (July 2003 through June 2004).

Statistically significant increases compared to last year can be noted in coverage of 4 doses of DTaP, 3 doses of Hib, 3 doses of Hep B, 1 dose of varicella vaccine, and all of the combined vaccine series. An improved economy and a variety of education efforts by Public Health in collaboration with health care professionals and partnering agencies may have contributed to the increases.

National Immunization Survey, July 2003-June 2004
Estimated Vaccination Coverage for Selected Vaccines Among Children 19-35 Months of Age

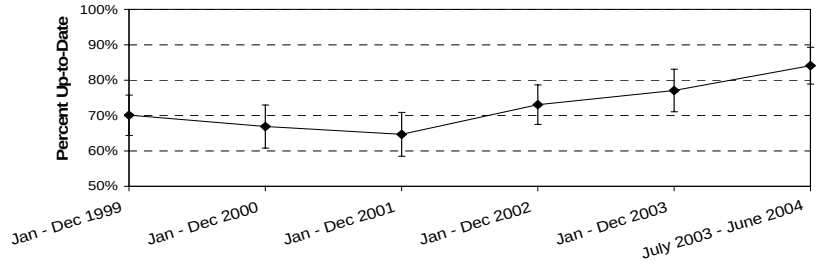
	4:3:1:3*	4:3:1:3:3**	1 MMR	4 DTaP	1 Varicella
US	82.3±0.9	80.5±0.9	92.9±0.6	85.6±0.8	86.2±0.7
WA	81.5±4.1	76.8±4.4	92.6±2.9	85.6±3.8	73.1±4.6
King Co.	87.7±4.7	84.1±5.2	96.1±2.3	92.4±3.9	82.8±5.2

* 4 DTaP, 3 Polio, 1 MMR, 3 Hib, ** 4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 HepB

The coverage rate for the combined series 4:3:1:3:3 (4 DTaP, 3 Polio, 1 MMR, 3 Hib and 3 Hep B) has increased significantly since 2001 (84.1% vs. 64.7%). Statistically significant increases since 2001 can also be noted in coverage for 4 doses of DTaP (92.4% vs. 76.5%), and 3 doses of Hepatitis B vaccine (92.8% vs. 78.5%). The trend for varicella vaccine coverage shows a steady increase up to 82.8 percent since the introduction of the vaccine in 1995.

When comparing King County rates to the U.S. and Washington State, point estimates for King County are higher. However, the county, state and national rates are considered statistically equivalent due to confidence intervals.

Estimated Immunization Coverage, Children 19-35 Months of Age, Completed 4:3:1:3:3 Vaccine Series (King County)



To view NIS data in its entirety visit: www.cdc.gov/nip/coverage/default.htm#NIS.

Continued on page 2…

…Continued from page 1

Healthcare professionals in King County deserve credit for the good results; keep up the good work! A 2004 study published in *Pediatrics*, listed King County as one of the top eight counties in the U.S. for number of completely unvaccinated children. We also know that approximately 3.6 percent of children enrolled in King County schools are exempt from at least one immunization (nearly all of the exemptions are for philosophical reasons).

There are at least three limitations for using NIS data. First, NIS is a telephone survey; although statistical weights adjust for non-response and households without telephones, some bias may remain. Second, NIS relies on clinician-verified vaccination histories and assumes that coverage among children whose clinicians did not respond is similar to that among children whose providers responded. Finally, estimates for states and urban areas should be interpreted with caution due to small sample size.

VFC News

Vaccines for Children Program

Pentavalent Vaccines

Many physicians and their patients are understandably interested in the pentavalent vaccine, Pediarix, manufactured by GlaxoSmithKline. This vaccine contains five antigens—diphtheria, tetanus, pertussis, hepatitis B and polio—and would significantly reduce the number of injections that babies would have to receive in their first year. Pediarix is a three-dose series at two, four and six months, which means an extra dose of hepatitis B vaccine if a dose had been given at birth as recommended. Although Pediarix has been approved for inclusion in the national Vaccines for Children (VFC) Program, it is not currently available through the Washington State VFC Program. Washington Department of Health is in the process of reviewing its criteria for purchasing combination vaccines.

Another manufacturer has created a pentavalent vaccine, using DTaP, IPV and Hib antigens – a combination that corresponds directly with the recommended childhood immunization schedule. This vaccine (currently in Phase III Clinical Trials) will probably not be available for at least another two years, pending FDA approval.

2005 VFC Agreements

Agreements for the new year were mailed to VFC Program participants in late January, and were due back to Public Health on February 23, 2005. If you did not receive a copy of the new agreement or have not mailed it back, please contact the VFC Program right away (206-205-5805).

VFC Program Growth in 2004

Seattle-King County's VFC Program continues to grow. In 2004, over 300 participating health care professionals administered a total of 689,613 doses of vaccine to children. This is an increase of more than 10,000 doses over 2003 (1.6%). The value of vaccine shipped to health care professionals by the VFC Program in 2004 exceeded $12 million, an increase of $1 million and 40,000 doses over 2003. Although more vaccine was distributed to King County VFC clinics or participants than ever before, the number of doses lost due to storage and handling errors declined by more than 1,500 doses. Health care professionals in King County are doing an excellent job with both administering and handling vaccine – thank you!

New Report Form

If you haven't done so already, please begin using the new Usage Report Form, included in the latest version of the VFC Provider Manual mailed in October. The new form is more compatible with age groups in the childhood immunization schedule. The Usage Report form is also available as a Word document. This may save time because information (e.g., lot numbers) can be carried over from month to month. Email richard.robles@metrokc.gov to request a copy.

Pertussis: Who is at risk?

Last year, there were 17,339 pertussis cases reported in the United States; with 765 in Washington state and 201 in King County. Of the 62 U.S. pertussis-related deaths reported between 1997 and 2000, 90 percent were infants six months of age or younger. No deaths were reported in King County.

In the U.S. between 1997 and 2000, the largest number of pertussis cases occurred among ten to 19 year olds. Although this age group accounted for the highest total number of cases, the highest *rates* for pertussis were among infants, with rates *more than ten times higher* than among people ten to 19 years age group. Adolescents and young adults are common sources of infection in young children.

Infants are particularly vulnerable to pertussis before they have received all four doses in the DTaP primary vaccination series, and are more likely to be hospitalized than any other age group.

King County Infant Hospitalization for Pertussis (2004)

Age	Cases	Hospitalizations
0-12 mos	31	15
13 mos – 5 yrs	19	0
6 – 10 yrs	15	0
11 – 15 yrs	42	1
16 – 20 yrs	22	0
21– 76 yrs	72	2

ACIP Recommendations

DTaP vaccine is recommended for all infants and children by the CDC's Advisory Committee on Immunization Practices (ACIP).

DTaP 4-Dose Primary Series	DTaP Booster Dose
@ 2, 4, 6 and 15-18 months of age	4 years of age

ACIP recommends dose 4 be given *earlier* than 15 months of age in certain circumstances:

- The child is at least 12 months of age
- Six months have elapsed since dose 3, and
- The child is unlikely to return at 15 to 18 months of age

Continued on page 3…

…Continued from page 2

The most frequently missed dose in the DTaP series is dose 4. A good prevention strategy is one that emphasizes timely administration of the first three doses. A recent study analyzing the predictors of delayed or missed doses of DTaP found that receiving dose 4 late or not at all was more prevalent among children who received a delayed dose 3.[1]

Late Dose 3 Precursor to Invalid Dose 4

Receiving dose 3 late also increases the likelihood that dose 4 will be given too early. If dose 4 is given less than four months after dose 3, it is invalid and must be repeated.[2] The repeated dose cannot be administered until six months after the invalid dose. In addition, DTaP has been shown to produce increased rates of adverse reactions when administered more often than recommended. An invalid dose of DTaP represents not only wasted vaccine, time and money, but also an increased risk of adverse reactions. It also makes it difficult to complete the series on time.

Recommended and Minimum Ages and DTaP Vaccine Dosing Intervals

Dose #	Recommended Age for Dose	Minimum Age for Dose	Recommended Interval to Next dose	Minimum Interval to Next Dose
DTaP 1	2 mos	6 wks	2 mos	4 weeks
DTaP 2	4 mos	10 wks	2 mos	4 weeks
DPaP 3	6 mos	14 wks	6-12 mos	**6 months***
DTaP 4	15-18 mos	12 mos	3 yrs	6 months
DTaP 5	4-6 yrs	4 yrs	---	---

* The minimum interval between dose 3 and 4 is six months, however, dose 4 does not need to be repeated if administered ≥4 months after dose 3.

Why Fully Immunized Children and Adults May Contract Pertussis

One factor that may be contributing to the rise in pertussis among older children and adults is waning immunity. Vaccine efficacy is estimated to be between 80 and 85 percent effective against typical pertussis disease shortly after completion of the primary series. However, protection declines over time, and after ten years, vaccine induced immunity is probably reduced. Individuals whose last dose of DTaP was administered more than ten years ago may develop mild or unrecognized disease that could be transmitted to infants who have not completed the 4-dose primary series. Immunity from infection itself also wanes with time.

Pertussis and Vaccinations Coverage King County (2004)

Age	Cases	Cases not Up-To-Date with DTaP Vaccinations
0-12 mos	31	7
13-24 mos	8	4
3 yrs	7	2
4 yrs	1	1
5 yrs	3	0
6 yrs	5	1

1. Strine, T.W., Luman, E.T., Okoro, C.S., McCauley, M.M., & Barker, L.S., (2003). Predictors of age-appropriate receipt of DTaP dose 4. Am J Prev Med; 25 (1): 45-48.
2. CDC. General recommendations on immunization. MMWR 2002; 51(No. RR-2): 3.

New Meningococcal Vaccine

February 10th, 2005, the Advisory Committee on Immunization Practices (ACIP) to the CDC changed its recommendations for meningococcal immunization in response to a new conjugate vaccine recently approved by the FDA. The new vaccine, MCV4 (Menactra® by Sanofi Pasteur), provides protection against the same four serogroups of *Neisseria meningitidis* (A, C, Y and W-135) as the existing meningococcal polysaccharide vaccine (MPV). *Neisseria meningitidis* is the most frequent cause of bacterial meningitis children between two and 18 years of age in the U.S.

ACIP recommends children 11 to 12 years of age and teens entering high school, as well as college freshman living in dormitories, receive MCV4. In addition, the committee recommends that teens entering high school be vaccinated for the next two to three years in order to facilitate a rapid reduction of disease.

Approximately 300 people in the U.S. die annually from meningococcal disease. In King County, since the beginning of 2003, there were 31 reported cases of meningococcal disease resulting in seven deaths. Of the 195 cases reported in King County over the last ten years, 27 percent were 11 to 24 year olds. Fifty-four percent of local meningococcal disease cases were caused by strains covered by available vaccines, while 46 percent caused by serotype B, a strain not covered by MPV or MCV4.

Age	King County Cases (1995-2004)	Deaths by Age
< 1 yr	29 (15%)	3
1-10 yrs	35 (18%)	2
11-24 yrs	**50 (27%)**	**6**
25-35 yrs	19 (10%)	3
36-45 yrs	15 (8%)	1
46-55 yrs	16 (8%)	2
56-65 yrs	8 (5%)	0
>65 yrs	23 (12%)	3
Total:	**195**	**20**

Comparing MCV4 to MPV

MCV4 has several advantages over the MPV. MCV4 is thought be effective for more than eight years according to clinical trial data, and protection is "boostable". Duration of protection from MPV is thought to range from three to five years, and booster doses of the vaccine are not effective.

MCV4, but not MPV, prevents meningococcal carriage. MPV is not routinely recommended for children less than two years old because of the poor immune response in this age group. MCV4 shows promise in this area, but is currently licensed only for people who are 11 to 55 years old.

MCV4 is produced in a single dose preservative-free liquid formulation that does not require reconstitution. MCV4 in a single dose vial provides a distinct advantage because a newly reconstituted multi-dose vial of MPV has a shelf life of only 30 days.

Adding MCV4 to the VFC Program

Despite the new recommendations, it still may be quite some time before MCV4 becomes readily available through the VFC program due to the high cost of the vaccine. Health care professionals interested in offering MCV4 to patients may order it directly from the manufacturer.

The VacScene **Immunization Newsletter**

Public Health
Seattle & King County
IMMUNIZATION PROGRAM
999 3rd Avenue, Suite 500
Seattle, WA 98104-4039

Return Services Requested

PRSRT STD
U.S. Postage
PAID
Seattle, WA
Permit No.1775

Highlights

New Medicare Reimbursement Rate for Vaccination

Centers for Medicaid and Medicare Services (CMS), has recently increased the reimbursement rate for vaccination to $18.21 for persons eligible for Medicare Part B benefits. However, the maximum allowable vaccine administration fee that may be charged for VFC vaccine (determined by federal statute) will not be affected by this change. **The maximum vaccine administration fee allowed for VFC vaccine in Washington state remains at $15.60 per dose.**

Reporting *Staphylococcus aureus* Infections

Over the past six months Public Health has received a small number of reports of methicillin-resistant staph aureus (MRSA) skin and soft tissue infections possibly associated with recent tattoos or piercings. Public Health is interested in investigating such cases, and requests that healthcare professionals report *S. aureus* and MRSA infections in King County residents who have recently received a tattoo, piercing or other methods of body modification by calling 206-296-4774.

Vaccine Information Statements: A Legal Requirement

The National Childhood Vaccine Injury Act requires that all health care providers provide parents or patients with copies of VIS before administering **each dose** of the vaccines listed in the schedule. Although parents may have received the same VIS only a few months prior, the VIS must be offered with each subsequent dose. For additional information visit: www.cdc.gov/nip/publications/vis.

Another Chance to View the CDC Four-Part Series

If you were not able to attend the 2005 CDC Epidemiology and Prevention of Vaccine Preventable Diseases satellite broadcast this year, it may be viewed by accessing the archives at: www.phppo.cdc.gov/phtn.

New CDC Hotline Number

Effective March 15, the CDC will have a new hotline number: **(800) 232-4636** or TTY 888-232-6348. The old phone numbers will remain in effect for an undetermined time period.

Available in alternate formats